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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
| 08/998,264 | 12/24/97 | ARMAND | M UTSB:646 |

005514 IM62/0104
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| EXAMINER |
| CHANAY, C |

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| ART UNIT | PAPER NUMBER |
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1745
19
DATE MAILED:
01/04/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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|------------------------|--------------------------------------|--------------------------------------|
| Advisory Action | Application No. 08/998,264 | Applicant(s) Armand et al. |
| | Examiner Carol Chaney | Group Art Unit 1745 |

THE PERIOD FOR RESPONSE: [check only a) or b)]

- a) expires _____ months from the mailing date of the final rejection.
- b) expires either three months from the mailing date of the final rejection, or on the mailing date of this Advisory Action, whichever is later. In no event, however, will the statutory period for the response expire later than six months from the date of the final rejection.

Any extension of time must be obtained by filing a petition under 37 CFR 1.136(a), the proposed response and the appropriate fee. The date on which the response, the petition, and the fee have been filed is the date of the response and also the date for the purposes of determining the period of extension and the corresponding amount of the fee. Any extension fee pursuant to 37 CFR 1.17 will be calculated from the date of the originally set shortened statutory period for response or as set forth in b) above.

- Appellant's Brief is due two months from the date of the Notice of Appeal filed on 8-18-00 (or within any period for response set forth above, whichever is later). See 37 CFR 1.191(d) and 37 CFR 1.192(a).

Applicant's response to the final rejection, filed on 7-28-00 has been considered with the following effect, but is NOT deemed to place the application in condition for allowance:

- The proposed amendment(s):

- will be entered upon filing of a Notice of Appeal and an Appeal Brief.
- will not be entered because:
 - they raise new issues that would require further consideration and/or search. (See note below).
 - they raise the issue of new matter. (See note below).
 - they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal.
 - they present additional claims without cancelling a corresponding number of finally rejected claims.

NOTE: Please see attachment

- Applicant's response has overcome the following rejection(s):
-
-

- Newly proposed or amended claims _____ would be allowable if submitted in a separate, timely filed amendment cancelling the non-allowable claims.
- The affidavit, exhibit or request for reconsideration has been considered but does NOT place the application in condition for allowance because:

- The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
- For purposes of Appeal, the status of the claims is as follows (see attached written explanation, if any):

Claims allowed: none

Claims objected to: none

Claims rejected: 26-49 and 62-65

- The proposed drawing correction filed on _____ has has not been approved by the Examiner.
- Note the attached Information Disclosure Statement(s), PTO-1449, Paper No(s). _____.
- Other

**CAROL CHANEY
PRIMARY EXAMINER
ART UNIT 1745**

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Response to Amendment

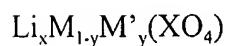
1. An appeal under 37 CFR 1.191 was filed in this application on 8-18-2000. Appellant's brief is due on 10-18-2000 in accordance with 37 CFR 1.192(a).

Claims 1-22, 24, 26-59 and 61-65 are pending in this application. Claims 1-22, 24, 50-59 and 61 are withdrawn from consideration. Claims 26-49, and 62-65 have been finally rejected.

2. The amendment filed 7-28-2000 under 37 CFR 1.116 in reply to the final rejection has been considered but is not deemed to place the application in condition for allowance and will not be entered because:

The proposed amendment raises the following issues of new matter:

1) The use of M' in the cathode material claimed as:



and

2) The limitation $0 \leq y \leq 0.2$

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Claim Rejections - 35 USC § 112

3. Claims 26-49 and 62-65 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As discussed above, applicants' rewriting of the empirical formula for a cathode active material introduces new matter into applicants' claims.

Claim Rejections - 35 USC § 102/103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 28, 30, 31, 62, and 63 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shackle (US Patent 5,721,070) for essentially reasons of record.

Shackle discloses the compound $\text{LiMn}(\text{VO}_4)$ which corresponds to applicants' compound $\text{Li}_x\text{M}_{1-y}\text{M}'_y(\text{XO}_4)$ when $x = 1$; $y=0$; $\text{M} = \text{Mn}$ and $\text{X}=\text{V}$.

Alternatively, the compound $\text{LiMn}(\text{VO}_4)$ corresponds to the applicants' compound $\text{Li}_x\text{M}_{1-y}\text{M}'_y(\text{XO}_4)$ when $x = 1$; $\text{M}=\text{Mn}$; $\text{M}'=\text{Mn}$ and $\text{X}=\text{V}$.

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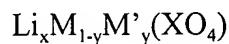
Response to Arguments

6. Applicant's arguments filed 7-28-2000 have been fully considered but they are not persuasive.

Applicants argue that grouping elements D, T, Q, and R together as M' merely simplifies the formula, and that $0 \leq y \leq 0.2$ is supported by page 6 lines 2-3 of the specification. However, grouping the metals D, T, Q, and R together as M' broadens the scope of claims beyond that originally filed. Limitations as to amounts of the individual metals D, T, Q, and R are no longer specified when metals D, T, Q, and R are grouped together. With regards to the limitation $0 \leq y \leq 0.2$, it is noted that the variable 'y' discussed on page 6 of applicants' specification does not describe the same quantity as the variable 'y' recited in claim 62. This may be seen in a comparison of the empirical compound formula originally disclosed in the specification and the formula disclosed in the amendments. Applicants' specification initially provides the formula:



Applicants' amended claim provides the formula



Using the subscript 'o' to identify the original specification variables, and the subscript 'a' to identify the amended claim variables, it can be seen that

$$x_o + y_o = x_a$$

$$y_o + d_o + t_o + q_o + r_o = y_a$$

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Although applicants specification recites $0 \leq y \leq 0.2$ at page 6 lines 2-3, this is in reference to ' y_o ' rather than ' y_a '. The recitation $0 \leq y_a \leq 0.2$ is not supported by the original disclosure.

7. Applicant argues the compound LiMn(VO₄) disclosed by Shackle is not an ordered or modified olivine structure. Applicant notes page 675 of *Spectrochimica Acta*, 1974, 30A, 673-680 states

In addition, a few other compounds are also characterized by an olivine-like X-ray powder diagram; but the occurrence of some reproducible extra lines (not allowed in the olivine space group) strongly suggests that despite some structural analogies, the space group of these compounds is different from that of olivine.

However, in discussing the compound LiMn(VO₄) on page 685 of the same article, it is noted that

strictly speaking, these compounds are not olivines, **but they may be considered as having an olivine-like structure** and their vibrational spectrum may be compared to that of true olivine type compounds.

(Emphasis added.) An "olivine like structure" is considered to describe a "modified olivine structure" and thus LiMn(VO₄) disclosed by Shackle meets the limitations of applicants' claims.

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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Stephen Kalafut, can be reached on (703) 308-0433. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Carol Chaney
Primary Examiner
Art Unit 1745
January 3, 2001